BOATING ASIA PACIFIC

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SPECIAL FEATURES

ASIA-PACIFIC'S TOP 50 SUPERYACHTS
DESIGN – MAXIMISING INTERIORS
EXPLORER YACHTS

FEATURES

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REVIEWS

ABSOLUTE 50 FLY
LAGOON 450 S
PERSHING 5X
WIDER 150 *GENESI*

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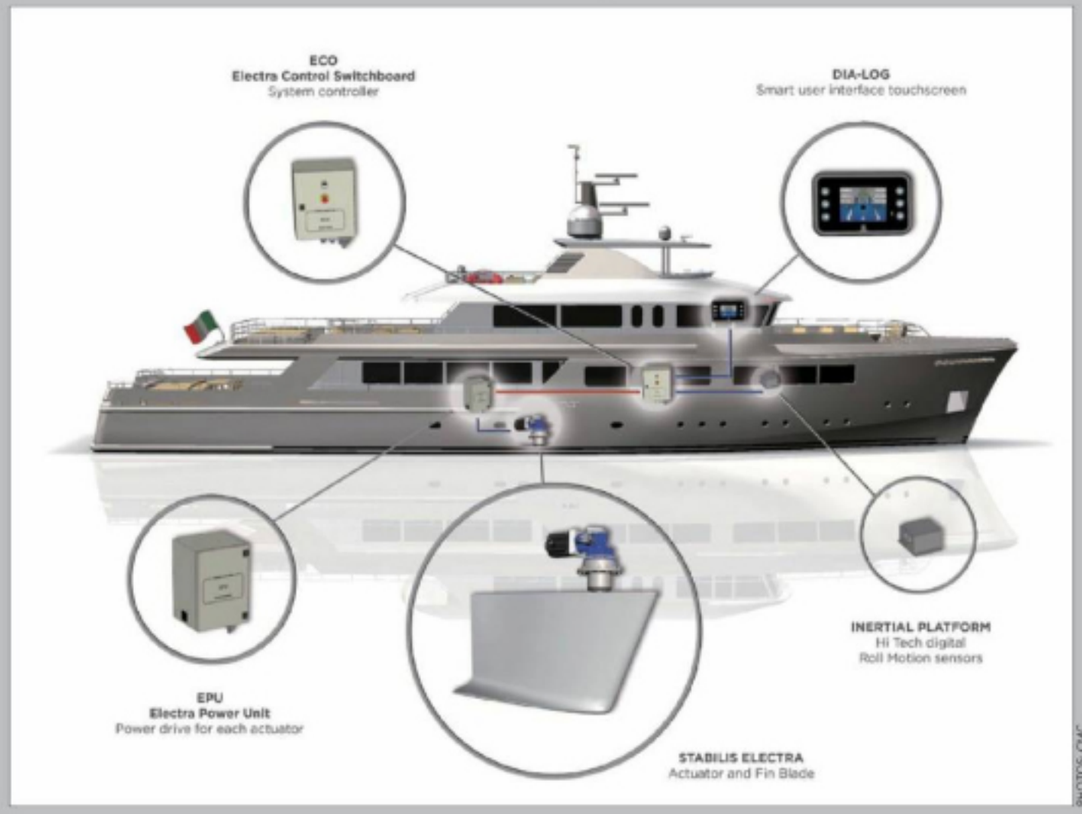
PERSHING 5X



PHOTOS: CMC

THE EVOLUTION OF COMFORT ABOARD

When it comes to the evolution of yacht technology, one of the main elements that represents an important change in life at sea is the evolution of stabilising systems.

They come in many shapes and sizes: gyro stabilisers, electric fins, hydraulic fins with new electronic control boxes that make the system more reactive and efficient, completely new systems as for example the Quantum's MagLift that uses spinning cylindrical tubes and Magus Effect to stabilise the yacht.

Stabilisation on ships started a long time ago, with the need to stabilise the platform for firing weapons from a military ship. Japan and the US started to study different solutions, for example gyro stabilisers by one side and dynamic fins by the other.

After decades of evolution, these systems became more efficient and in the meantime smaller and lighter – so it is now possible to use them on a relatively small yacht of 14 metres up to 100m+. Thanks to the evolution of the actuator and electric engines now available, makers are able to realise small but very efficient systems.

The gyro system created by Seakeeper comes in different sizes and technical details that solve in a very interesting way the problem of stabilisation aboard many different kind of boats. These gyros can be used alone, or combined with other systems. The combination of two different systems offers top results during navigation and at the anchor.

The active fins systems are moved by electro-hydraulic power, although some others only by electric actuator. Those systems are controlled and managed by a central box that receives all the information from the stability sensor and quickly adapts the fin positions to stabilise the platform. Simple to say, but a bit complicated to realise and develop.

There are several companies involved in developing this kind of system, for example Naiad, Quantum and CMC. For these companies, the big effort is to create a responsive system that is fast enough to offer the right stabilisation but, in the meantime, does limit the hydrodynamics of the hull.

Italian engineer Alessandro Cappiello and his company CMC have created a totally new electric stabiliser system, becoming the first in the market to adopt these kinds of engines and technology.

"Our first electric fins system was presented in 2008 at the Genova Boat Show as a system able to offer stabilisation at anchor and during navigation," says Cappiello. "From those days we never finish to study and develop our efficient systems – we've been able to reduce dimensions, increase the stabilisation efficiency, integrating this system with other electric systems on board, made by us or not. For example the bow thruster and the rudders are all managed from a box that can mix the function of any system to obtain perfect results in terms of stabilisation and manoeuvrability.

"I started to study and develop electric systems a long time ago because they are able to offer better performances if compared with any other kind of system, with less power consumption, while offering in the meantime an interesting reduction of costs and time for the installation.

"We were the first and our products are patented so nobody can copy, but other companies are working on electric systems, too. Actually we can offer systems for yachts from 18m to 60m. We can also apply our systems on boats with a total length of 16m, but our systems perform better on bigger yachts."

One of the main goals of the electric systems is efficiency thanks to the high response of the actuators combined with being able to install them below a bed because they don't produce any kind of noise and are small compared with other kinds of actuator in electro-hydraulic systems.

Low power consumption is another big effort with this kind of system. "I really believe that the future is represented by the integration of electric systems and that's the reason why some years ago we presented the SE Integrated System that include the control unit that manage the fins, thrusters and in some application even the rudders for a best result, with a short time for delivery and a simple managing operation for the Captain," says Cappiello.

Another system is the Quantum MagLift Zero Speed and Underway system. Also on this application the possibility to realise it become from the evolution of the actuators and the electronics with computer control.

The concept is based on the theory of Gustav Magnus and Sir Isaac Newton, about the water flows over the cylinder that create a pressure difference producing a very powerful lifting force. Quantum produce also fins systems and developed a special fin shape that allows it to obtain more efficient lift power.

From gyro to fins systems in any case the evolution depend essentially by the evolution of the electric engines/actuators and the evolution of the electronic and computational box called to manage those elements on board. The result is a total safe way to stabilise the yacht with reasonable costs even if doing a refit on a pre-owned boat or yacht – more comfort, no noise. – *Angelo Colombo*

www.quantumstabilizers.com
www.seakeeper.com
www.naiad.com
www.cmcmarine.com